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ORIGINAL ARTICLES.

Tissue Repair.

By S. E. SHELDON, M. D., of Topeka.

Read before the Kansas State Medical Society, at Atchison, May 4, 1894.

Mr. President and Members of the Kansas State Medical Society: While this Society has been highly favored during this session with a large number of excellent and interesting papers on subjects of practical surgery, and has listened to reports of large numbers of brilliant and successful surgical operations, it might not be inappropriate at this time to "look backward" a little and devote a few moments to the study of some of the principles of surgery, and especially that groundwork of all successful surgery, "Tissue Repair," or regeneration of tissue, for there is probably no physiological process in the human economy that is of more direct interest to the surgeon; and in order that our patients may derive the greatest amount of benefit from our efforts to aid nature in this process it is necessary that we thoroughly understand and comprehend the process, and the changes that take place, both in the pre-existing and newly-formed tissues. And we start out with this first proposition: that all repair, or regeneration of tissue, is the product of cell-proliferation from the nearest fixed cells of its kind. Second—That each tissue reproduces its own kind, and no other; for example, the osteoblasts from the bone produce new bone; the neuroblasts from the nerve tissue produce new nerve, and the myoblasts from the muscular tissue produce new muscle, and so on with all of the tissues of the body undergoing repair or regeneration. This process of cell-proliferation, whether it be by karyokinesis or by direct cell division, when completed, produces tissue which is histologically the same as the tissue from which it sprung. Now, let us go back a little further and see what conditions exist and are essential to this process of tissue repair. And, first, there must be an increased blood supply to the parts, to supply the demand for material in increased quantity sufficient in amount in proportion to the injured tissue to be repaired, to produce, support, and protect the embryonic cells and the newly-formed tissue. There is also, at the first, an increased supply of nerve power or nerve energy commensurate with the amount and character of tissue to be repaired. The amount of the increased supply of blood is also commensurate with the injury to be repaired. And now let us see what really takes place in and around the seat of traumatism. The increased rapidity of the circulation and the increased oxidation of the blood, together with rapid tissue metamorphosis, produces the first essential condition —that of heat; then, the exudation of the blood serum and of the white blood corpuscles into the perivascular space and tissues, produces the second essential condition that we always find—that of swelling; while the pressure upon the peripheral nerves produces the third essential condition of pain and increased nerve energy, while the increased supply of red blood corpuscles produces the characteristic redness; and, as a result of the above conditions, we get impairment of function, which is an essential condition to repair, as it tends to the production of physiological rest, a very important element in normal tissue repair.

And thus we have the necessary conditions to repair or regeneration of tissue—heat, redness, pain, swelling, with impairment of function—without which conditions you cannot have repair or regeneration of tissue; and this is what the older authors denominated inflammation, but which is really only nature's effort to repair injured tissue. It matters not whether the injury to be repaired is from a traumatism or from the ptomaine of some pathogenic germ; whether it be a simple incised wound, whose edges can be accurately approximated, or an extensive lacerated or contused wound, or in what tissue it is, the process of repair is the same, except, perhaps, in the cornea and cartilages, whose manner of union or repair is yet an open question. Now, then, if we would be successful as surgeons in our efforts to aid in the repair of tissue, we must do all in our power to maintain the above necessary conditions, within the limits of physiological action, and at the same time protect the embryonic cells from mechanical injury or destruction, as well as from those pathogenic germs whose presence in sufficient numbers would be inimical to cell life and cell development; and the natural condition of the healthy body, with the injured parts freed and protected from pathogenic germs so far as possible, is the most favorable condition to "Tissue Repair." That pathogenic germs always exist in wounds and in the body cannot be questioned, but when in limited number, and the tissues endowed with a reasonable power of resistance, the leucocytes acting as phagocytes, the blood serum and the nuclein of the blood destroy them, or else render them and their ptomaines, or toxines, or proteids, harmless.

If the foregoing be the correct theory of tissue repair, what becomes our duty as surgeons? It certainly must be to keep and maintain the existing tissues, organs, and functions of the body in the best possible condition to resist diseased action, but especially to resist the innovation and growth of pathogenic germs, but above all to prevent the formation of those ptomaines, or toxines, or proteids, which are the chemical product of decomposition of tissues when acted upon by pathogenic germs. If, therefore, you can protect the embryonic cells from the destructive action of pathogenic germs or their ptomaines, and preserve the immediate tissues in as near the normal condition as possible, you will have fulfilled the indications necessary to the normal repair of tissues. There are three things necessary to the growth of pathogenic germs, and the development of their ptomaines, and they are "heat," "moisture," and a "suitable media," and if either of these be absent their growth or the development of their ptomaines will not take place; therefore, in dressing your wounds these facts should ever be borne in mind. If, during the process of repair, the temperature of the parts is reduced below the normal, or if the wound becomes infected by pathogenic germs, or if the blood supply is decreased below normal, the process of repair is impeded or arrested altogether, for all of these conditions are essential to physiological repair of tissue, and, though they may exist in an almost imperceptible degree, yet they must and do exist.

Growing Popularity of Ether Anæsthesia.

New York Medical Journal.

The *Medical Press and Circular* had a series of reports on the anæsthetic procedures in several hospitals of London. King's College Hospital and the Royal Free Hospital are not free users of ether; the former relies on chloroform in a majority of cases, while the latter is partial to the A. C. E. mixture. In the case of nine other hospitals, the anæsthetists administer ether in the larger proportion of cases. At the London Hospital a very notable change has taken place in this regard; ether is the anæsthetic chiefly used, being administered twice as frequently as chloroform. A few years ago the opposite preference ruled, but a careful and extensive study of the relative workings of the two substances has effected this reversal. The anæsthetist of St.

George's Hospital shun's the use of chloroform "unless there is some good and sufficient reason to give the coroner in case of a catastrophe," although he considers the substance safe in the hands of a competent operator. Ether is by far the most popular anæsthetic at the Charing Cross Hospital, being used in 70 per cent. of the cases. Chloroform has the preference in operations upon the mouth, tongue, etc., or where the use of ether is contraindicated by the existence of some pulmonary complication. Dr. Hewitt, at the London Hospital, prefers chloroform in cases where bronchitis or emphysema exist, and a majority of the anæsthetists use it for children, elderly persons, and those who have bronchial trouble. Dr. Bourns, of the Westminster Hospital, however, does not refrain from the use of ether for old persons, since he thinks that apprehension with regard to the ill effects of ether in age has been excessive, and that when lung disease has followed etherization it is more likely to have been caused by some exposure of the chest or some faulty step in the operation than to have been excited by the vapor of ether. Nearly all the outpatient departments use nitrous oxide, and so do the anæsthetists of the hospitals when minor operations are performed. In some of the hospitals that substance is also used to induce a condition preliminary to full anæsthesia, the experience being that less ether is needed and a quieter and prompter sleep is obtained than when ether is used from the outset. In some cases chloroform is substituted for ether, if the patient under ether evinces a tendency to vomiting or bronchial irritation; after the ether has been withheld for a while it may be administered again.

At St. Mary's Hospital ether is used first in patients that are badly nourished and run down from excesses; when the period of excitement has been reached chloroform is given instead of ether; afterward, when the patient is quiet and breathing regularly, the use of ether may be resumed.

The majority of London anæsthetists are particular to use the ether in as fresh a condition as possible and preference is given to the use of an inhaler. The Clover inhaler is largely used, though Grimsby's and Junker's have their adherents. Apparently much less ether is used for a patient in London than for one in our own hospitals.

The Vaginal Secretion of Pregnant Women.

American Journal of Obstetrics.

Konig (*Centralblatt fur Gynakologie*, 1894, No. 1), after reference to the investigations of Doderlein, Winter, Steffek, and others, who claimed to have found pathogenic micrococci, particularly the staphylococcus albus and aureus, as well as other pus-producing microbes, in the vaginal secretions of women after labor, relates the results of his own experience in one hundred cases of women aseptic at the period of labor. He claims to have found in the lochia the streptococcus most frequently, and but seldom the staphylococcus aureus, and never the staphylococcus. After considering minutely the reaction of the vaginal secretion, which in three hundred pregnant women he found to be distinctly acid, he concludes that in pathological conditions the secretions attain a much higher degree of acidity, so that the streptococcus pyogenes can hardly thrive therein; at least he was unable to obtain cultures of this germ. The author further concludes that the vaginal secretion of every untouched pregnant woman contains nothing pathogenic, the thrush or gonococcus germ excepted. Both are bacteria which upon the usual media of culture are aerobic at the body temperature. The vagina of every untouched pregnant patient is therefore aseptic.

Vaginal injections of antiseptics he considers dangerous in the ordinary patient, and they may chemically lessen the resistance of the tissues to bacteria, and may increase the intensity of septic endometritis by washing bacteria into the uterine cavity.

WATER is the most useful of all medicinal agents.

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Topeka, Kansas, Saturday, July 21, 1894.

Shall We Have a Medical Law?

This is a question which has apparently been decided by the majority of the profession of Kansas, but there still remains a very important factor in public affairs with whom this question is still open. The people and their representatives, with whom the solution of the question really lies, are still subject to judicious influences in favor of the law. It has generally been the case, and seems to be now, that the opposing forces are more active in their efforts to defeat medical legislation than are those most interested, in their efforts to secure it. We have let the matter rest because we were told it was too soon to begin our campaign. We are compelled to notice the fact that active opposition is being made to the passage of the law. An article written for the express purpose of defeating our efforts has been stereotyped and is published all over the State. We cannot understand the interest the author of the article has in the matter, but that he intends to do all the fighting he can is very evident. In view of these facts it is well for every physician in the State to use his personal influence with the people and with the representative from his district in favor of the law. As we have often claimed, our previous failures have been due more to procrastination than anything else. At any rate the plan of waiting until the last moment has proven a failure, and now since we have decided what we want we can try what hard work will do. We have heard nothing from the committees appointed by the convention, and we therefore take it for granted that nothing is being done. Every member of that convention and every physician who is interested in securing a medical law, should consider himself a committee of one to do all in his power for the law.

Progress in Surgery.

There is a healthy reaction setting in against so much surgery. The low mortality compared with the operations of the old surgeons or past surgery, encouraged a too free use of the knife. The secret of the safety of the operation consisted in cleanliness, and time has proven that many of the operations prompted by the safety of it were uncalled for, and the patients have not been benefited by them.

There was a crop of thirty-day surgeons arose that shone in and dazzled the medical world for a few days, and then their sun set. We are not speaking against conservative surgery, for there is more surgery required to-day than ever before in the world's history. But it is against the snap diagnosis made from lack of knowledge and over-zeal and the desire to report a large number of cases operated on successfully during the year. A surgeon, of all men, should first be a learned physician. If he is naturally erratic he should control his

erraticism by his judgment and knowledge, and the future happiness of his patient. The first thing to know "is there a necessity for an operation," and not that the operation is comparatively harmless.

Roberts says: "It seems to me that a revival of learning in surgery is upon us, a going back to the study of etiology, symptomatology, diagnosis and treatment, destined to restrain unseemly haste in adopting the scalpel as a panacea. If my observation of late events has been correct and unprejudiced, the operative madness has usually, though not always, been endemic among those whose preliminary educational training has been circumscribed and whose medical study and experience have been in one field rather than in all. Dogmatists in science and in religion are most usually found among those of limited scientific and wordly knowledge."

A good specialist must study general medicine. He must have a thorough knowledge of the cause and symptomatology of disease. He must have a thorough and minute knowledge of the anatomy of the parts with which he deals and a good general knowledge of the anatomy of the whole body. A part is not the whole, and the specialist who fails to obtain and retain this general knowledge, is a dangerous man to human life.

Homeopathic Pathology.

The following scientific dissertation on a very common trouble appeared in the *Kansas Farmer* in answer to a correspondent:

"Your trouble is like that of a great many other men. Large boys and green young men often think they are very smart and foolishly try to outlift all creation, and frequently they rupture a muscle in the back or loin or hip or leg, or break a ligament. and then they are laid up for weeks or months and even years with what is commonly called a weak back, and there frequently come spells, when a sudden hitch of pain comes into the weak spot, and then the man is "done for" for a few hours, or days or weeks. He is laid up with what is known as lumbago, a kind of rheumatism. It does not afflict all men, and but few women, for, as a rule, women do not try to outlift Sandow, or Dr. Winship, or Samson, and they seldom break their backs by that foolishness. I have been there and I know now how foolish it is to overtax one's lifting capacity.

"Small doses of arnica internally, or bryonia, or nux vomica, or rhus tox, will often greatly improve the condition and sometimes cure permanently. The galvanic battery (not the electric) will do the case much good if applied correctly. But orificial surgery does more than all other remedies combined for lumbago. It cures the internal hemorrhoids and frees the great sympathetic nerve from a pinch and thus allows the process of nutrition to go on untrammelled in the system and the ruptured muscle is put in a state of fine repair, and with proper care will remain so."

We commend this for the new etiology of rheumatism. Only a man of very broad and acute perceptive powers (?) would recognize the necessary existence of piles in a case of this kind. We hope our readers will be able to make out the relation of internal piles to a "ruptured muscle or broken ligament." We have failed so far.

DR. JAMES MOORES BALL, editor of the *Tri-State Medical Journal*, will soon remove to St. Louis to take the chair of ophthalmology and Otology in the St. Louis College of Physicians and Surgeons.

A CHAIR in the Chicago Medical College has been endowed for Dr. N. S. Davis—a wealthy Chicago manufacturer giving $50,000 for that purpose.

DR. S. E. SHELDON, of Topeka, has been elected to the chair of gynecology in the Kansas Medical College.

Eastern Kansas Medical Society.

The society met in the parlors of the National Hotel, Leavenworth, Kas., July 10, 1894, at 8 o'clock P.M.

In the absence of the president, Dr. R. E. McVey, Dr. J. A. Lane, of Leavenworth, was chosen president *pro tem.*

Dr. R. S. Magee was made secretary in the absence of Dr. Wall.

Members present: Drs. J. A. Lane, W. J. Van Eman, S. B. Langworthy, H. B. Callihan, of Leavenworth; A. P. Tenney, of Kansas City; Joseph Haight, of Grenada; W. S. Lindsay and R. S. Magee, of Topeka.

Dr. O. C. McNary, of the National Soldiers' Home, read a paper entitled "Spinal Irritation."

In discussion Dr. Tenney said the doctor shows by his paper that he has special opportunities for observation in this line of disease. My experience has been that these troubles exist in old persons more frequently and think them due to anæmia. It may be caused by concussion. Such cases, I think, are less hopeful. In my treatment I use electricity, and endeavor to improve the nutrition.

Dr. Lindsay: Dr. Dana differs from other authors in the description of this disease somewhat, *i. e.*, tenderness of the spinous processes. This subject of spinal irritation brings up the old and familiar illustration of the wires of an electric circuit—an irritation produced anywhere within the circuit can be felt anywhere. I think most likely the lesion is in the posterior columns of the cord or may be in the brain. I have seen tremor of the eyelids in some of these cases. Disordered digestion, fissured tongue, offensive breath and tenderness of the tendons are the usual accompanying symptoms. There is considerable imagination in some of these cases. A lady patient of mine while here suffered the usual amount from spinal trouble, but as soon as she went to California she felt entirely relieved. My experience is that more women than men suffer from it. Treatment: Electricity and nutrition; also cheer and brace these people up.

Dr. Haigh: I believe that nine-tenths of all neurasthenic patients suffer from spinal irritation. That excellent medicine, hypnotism, which means confidence in the physician, is the standard remedy in these cases. It also works well in gynecology. In the treatment of these cases I use galvanism almost exclusively with the positive pole over the spot of tenderness. There are three principal foci of tenderness, namely, in the cervical, dorsal, and lumbar centers.

Dr. Langworthy: I consider that there is a great deal of haziness surrounding this subject. The character of the disease produced by concussion and sexual indulgence I think differ greatly. Too often slipshod diagnoses are made in these cases, being satisfied to class them all as spinal neurasthenia.

Dr. Magee: The laity are very apt to take hold of this same pretext and class all serious troubles as coming from some injury to the spine. They also partially understand the connection between the eyes and the spine. Related a case of railroad injury to the spine. Blindness resulted, which was attributed to the injury, but which unquestionably was due to specific causes contracted long before the injury.

Dr. Van Eman: To-day a large, strong, healthy looking woman came into my office. She was 38 years of age, four children in the family, and being compelled to make the living was desirous to know what occupation she could pursue. She could until recently do hard work, but now cannot lift or stoop without discomfort. On examination I found three or four tender spots along the spine—pain resulting from pressure radiating around the body. On making a vaginal examination I found she had a cystocele and rectocele; also antiflexed and prolapsed uterus. She complained of irritable bladder at times. Query: Is the pelvic condition here responsible for the spinal irritation complained of, or shall I treat the spinal irritation and expect to get rid of all these troubles?

Dr. Lane: Spinal irritation is a hydra-headed affair. An irritation to the spine

anywhere affects the cord. Pathological changes which take place in the cord are extremely difficult to ascertain. Even the normal anatomy is hazy and difficult to make out to a certainty. Spinal irritation is a fruitful source of malingering.

Dr. McNary said in closing that the railway spine is a great bugbear to the patient's mind. I think the trouble in the case cited by Dr. Van Eman is pelvic and not spinal. A man may have spinal irritation from a smashed foot, but you would not treat the spine to get the foot well. Clinical study is the principal means of knowing much about spinal troubles.

The next paper was on "Heredity," by Dr. Jas. H. Lane, of Leavenworth. The doctor's paper was elaborately illustrated by means of drawings and diagrams, and we hope to soon publish the paper in the JOURNAL.

In discussion Dr. Tenney said: I have been well pleased and interested in the doctor's scientific view of this subject. Moral characteristics are manifested in certain families. The study of the Juke's family furnishes a splendid example of the heredity in crime. Within 75 years a family of 1,200 persons sprang from five sisters, several of whom were illegitimate and three of whom were unchaste. Seven hundred and nine have been traced and give a category of disrepute as follows: Paupers, 280; criminals, 140; thieves, 60; murderers, 7; prostitutes and adulteresses, 165, and illegitimate children, 91. Number of them contaminated by syphilitic diseases, 480. Cost to the State of New York, $1,380,000. The family history of this family is deplorable—they violated all known laws of chastity.

Dr. Lindsay: I believe in the heredity of fineness of quality and of grossness of makeup of nerve tissue. That it is possible to inherit high types of nerve tissue. In regard to the author's suggestion that giants can be propagated, I hardly believe it possible. The natural selection of sexes is opposed to it, and it is not the aim of nature to construct such gigantic human beings, but only happen so.

Dr. Magee: I have been much interested in the doctor's explanation of Karyokinesis. The text-books of to-day keep it shrouded in mystery. There is no better illustration of the life and characteristics of the cell than an egg.

Dr. Lane, in closing, said that in our treatment of diseases the more we know of the embryo the better able will we be to treat them scientifically and intelligently—before you attempt to aid in the reparative processes you ought to know of the development. Embryology is best studied by the embryo. A high type of intellectuality is best produced by uniting two intellectual beings. Leprosy is not inherited. I do not believe in the heredity of tuberculosis—but do believe in inherited weakened mucous membranes favorable to a tubercular condition; not able to resist. If a farmer would take equally as much care in developing his boys as the pig he expects to show at the fair, he would be able to produce a high type of physical manhood.

Dr. Tenney exhibited a specimen to the society of dermoid cyst, of which he gave the following history: Mrs. H., age 52; married; one child now 30 years of age, at the birth of which she had a difficult confinement, suffering discomfort in the left ovary ever afterward. Soon after she noticed an enlargement in left side which gradually increased until six years ago, when I first saw her. Her abdomen at this time was as large or larger than a woman at full term—which condition she had been in for several years. I kept her under observation for some time. At first there seemed to be no change in size, but later on it began to increase in size markedly. I first tapped her in July, 1890, drawing off about 50 pounds of clear fluid. Tapped again in December of the same year, with the same result. Again in August of the following year, and again in April, 1892, and again in December, 1892, and in October, 1893, each time drawing off from 25 to 50 pounds of liquid. The fluid at the last tapping was of a dark, greenish color. I tapped her again July 5, 1894, drawing off about 50 pounds of dark, thick, flaky, pigmented fluid. Each time, following the

tapping, she was up and about her work in a week. After the second tapping I noticed a hard tumor in the region of the left ovary, and each subsequent tapping showed it was gradually increasing, until it reached high up in the left epigastric region, extending over in front of the stomach. She passed through the first twenty-four hours after the last operation as comfortably as usual. She had some diarrhœa in the morning and forenoon, and had exerted herself some in getting upon the stool. I was called at noon. She had had a chill and severe pain in all parts of the body, lasting about one hour. Temperature that evening 101½ F., next morning 101½, going down to normal in the evening. Temperature did not come up afterwards, but nausea and vomiting and great prostration followed. In examining the abdomen found that the hard tumor had disappeared; gaseous distension of the bowels; extremities œdematous. She died July 8—the fourth day after the last tapping. On opening the abdomen half an hour after death quite an amount of gas escaped, and from 25 to 30 pounds of this dark fluid was removed. Absence of the omentum. Attached to the broad ligament and to the lateral abdominal wall on the left side, extending up under the ribs, was the remains of the sac, and passing well under the liver, I found this large dermoid cyst, which I here show you this evening. If you will notice, here is a large bunch of hair, bones, and fragmentary undeveloped teeth. It has the general shape and appearance of a fœtus."

This report was discussed by all of the members present.

The resignation of Dr. Wall was accepted and Dr. Magee made secretary for the remainder of the year.

On invitation of Dr. Tenney, the society adjourned to meet in Kansas City, Kas., the second Tuesday of October, 1894.

Dr. Tenney and Dr. Downes were selected as a committee on arrangements for the next meeting.

Adjourned.

R. S. MAGEE, Secretary.

Topeka Academy of Medicine and Surgery.

JULY 9, 1894.

Meeting was called to order by the vice-president, Dr. R. S. Magee.

Members present: Drs. Sheldon, Lindsay, Storrs, Church, Colcord, Pelton, Gilbert, Eastman, Magee, Adams, R. E. McVey, Barnes, and Powell.

Visitors: Dr. Rafter, of Holton; G. A. Tull.

A paper was read by Dr. Colcord on the subject, "Non-Microbic Diseases."

At close of paper Dr. Magee announced that Dr. Lindsay had a specimen showing the result of an acknowledged microbic disease, and as the discussion of the paper just read would involve both, he asked that as a means of opening the discussion Dr. Lindsay would show the specimen.

Dr. Lindsay's specimen was of tuberculous ulceration of intestine and mesentery. Ulceration involved part of colon and sigmoid flexture. Case: Man; age 65; hemorrhage of lungs before maturity; has since been fairly healthy. Has occasionally had colic pains and discharge of blood from bowels. Dr. Lindsay first saw him two months ago. Temperature 101°; pain in back; colic; jaundice; frequent discharge from bowels; great pain in vicinity of sigmoid flexure. Man died this morning;

Remarks on paper by Dr. Lindsay: All organic diseases might be included in the list of non-microbic mentioned. In case of a disease of nervous origin we cannot say there is no change in the blood. There may be microbic fermentation which affects the nervous system,

Dr. Pelton: There is a tendency to pass to the extreme in all progressive sciences; think such has been the case in regard to germ diseases; in surgery, over-estimation of bacterial causes of inflammation. Disease may be produced by over-activity, degeneration, and temperature elevation. In pathology there is pus called physiological pus. There should be a distinction made between a pus cell and an infective pus cell.

There are microbic diseases, but to say that all diseases are of microbic origin, I believe, is false.

Dr. Sheldon: Well enough to try to draw the line between microbic and non-microbic diseases. Do not think this idea has gone too far. The diseases are the result of the toxines produced by the germs. We are not far enough along to be able to judge whether these nerve centers may or may not be affected by toxines.

Dr. Eastman: Well understood that the ptomaines cause the disease. Leucomains are found in the system in ordinary conditions. Example: Common cold is caused by effete matters which should be thrown off by the skin or other eliminatory tracts. Treatment may be to oppose one poison with another. Example: Mania may be relieved by some inter-current disease, such as abscess or erysipelas.

Dr. Sheldon suggests that the visiting physicians be asked to take part in the discussion.

Dr. Magee: I think it is time to call a halt and see if in all cases the microbe theory is tenable. Prof. Vaughn advocates the theory that the white blood corpuscle is supported by neuclein.

Dr. Sheldon: Neuclein is to increase the vital force of the white blood. It is known to a limited extent what the the functions of the white blood corpuscle are.

Dr. Colcord closes the discussion: Tried to avoid discussion of microbic diseases. Antidotal remedies operate chemically. I am of the opinion that the toxines act through the blood upon the tissues directly, and not through the nerve supply.

IODINE is an alterative of great value according to Dr. Love, especially when given in the form of the iodide of hydrogen (hydriodic acid. It is pallatable and non-irritating to mucous surfaces.

ACETANELID is now being used in place of iodoform for surgical dressing. It is claimed to give satisfaction.

Government License.

Many of our readers are doubtless not aware of the fact that in 1864 a law was passed requiring physicians to pay to the government a tax of ten dollars, for which a license was issued for one year. We have in our possession one of these licenses issued in 1866. We cannot say when the law was repealed, but it was evidently in force for several years.

Vienna Paste.

Parmenter in Association Journal.

Its composition is as follows:

Wheat flour	60	grains
Starch	60	"
Arsenic	1	"
Cinnabar	5	"
Sal ammonia	5	"
Corrosive sublimate	0.50	centigrams
Sol. chl. of zinc at 52	245	grains

First reduce the first six substances to fine powder separately, then mix in (glass or china) mortar and upon the whole is poured the solution of zinc chloride, and stirred briskly to prevent the formation of lumps.

The value of caustics is summarized as follows:

1. The value of caustics in the treatment of malignant disease depends upon the use of proper caustics and their intelligent application in suitable cases.

2. A proper caustic is one which completely destroys and removes the malignant disease.

3. Mild caustics are inefficient and dangerous, and therefore to be avoided.

4. Bougard's or Vienna paste is the most generally useful and escharotic.

5. Proper technique in application accentuates the value of caustics.

6. The suitable cases are those which have a limited extent and are easily accessible; or, in other words, cancer of the skin,

lip and external, in their incipient stages.

7. The prognosis should be most excellent, cure resulting in the vast majority of cases when treatment is early and thorough.

Physiological and Pathological Effects of Electricity.

Proceedings of the American Medical Association, at San Francisco, in Pacific Medical Journal.

Dr. E. H. Woolsey, of Oakland, Cal., presented an elaborate experimental and statistical report on the "Physiological and Pathological Effects of Electricity," in which he said that it had been nearly a century since electricity was first applied in medicine, but until recently it had not been generally adopted. In the earlier part of his career he used a small portable battery, but with little success. He now used a stationary gravity battery and milliamperemeter, so as to administer it in regular and definite doses. "A remedy that is powerful to do good," said the doctor, "is sure to be harmful or helpful according to the mode and circumstances of its administration; a fact borne out by the profession at large."

Dr. Woolsey uses electricity conveyed about 150 feet from a stationary battery to a switch, from the switch to a rheostat (Massey's current controller), and from the rheostat to the animal operated upon, with a Weston milammeter in the current. The stabile current alone is used, as the labile is impractical with rabbits. From experiments upon 39 domestic rabbits treated by electricity and autopsies of 50 additional rabbits, as compared with those under treatment (due attention being paid to age, sex, size, etc.), the doctor showed that the temperature was lowered in nearly every case, and also described its effect upon each organ of the body.

These experiments were elaborated by charts showing the following results: (1.) Congestion of the lungs, and even pneumonia, when using the descending current. The congestion was active and passive from the ascending current. (2.) Abnormal conditions prevailed in the kidneys—there being during seance, a forcible ejection of urine which was at times bloody. (3.) Either congestion or anæmia of the bladder. (4.) During prenancy, the mother loses weight, but the fœtus is apparently well nourished.

By experiments made upon the brain and spinal cord, it will be seen that there is nearly a complete antagonism between the anodal and cathodal effects upon the circulation from first to last.

After finishing this interesting paper the doctor verified his statements by applying the various currents upon a pair of rabbits he had procured for the occasion. By using 10 milliamperes, there was no apparent effect upon the movements of the animal, but there was a lowering of surface temperature and cooling of the ears. At opening of the current slowly no shock occurred; upon slowly closing, slight shock, 20 milliamperes. Descending current—dilation of pupils. Ascending current—contraction of pupils. Thirty milliamperes, turned on slowly, increased respiration and agitation; turned off slowly there was paralysis and forcible ejection of urine. These symptoms were exaggerated by increased amount of electricity.

Bacteriological Notes.

Toxins and antitoxins. It is stated by Dr. Kanthack, in the *Medical Chronicle*, that the specific action of pathogenic bacteria has been shown, during the past few years, to be due to toxalbumine instead of ptomaines or poisonous bases, as was formerly supposed. They are considered by Buchner to be direct products of bacterial cells, and he has proved this in the case of tetanus, by growing the bacillus on a solution of asparagin. Antitoxins, as well as toxins, are probably bacterial products. Antitoxins act by establishing in animals immunity to specific diseases.

It is doubtful if the death rate in pneumonia is less than in the days of venesection.

The Danger of Intra-Uterine Injections of Glycerine for the Production of Abortion.

American Journal of Medical Sciences.

Pfannenstiel, in the *Centralblatt fur Gynakologie*, 1894, No. 4, relates his experiences with intra-uterine injections of glycerine for production of premature labor. He states that when this procedure was first published he admired its boldness, and concluded that the dangers of it were but occasional. His later experience in two cases, the history of which he gives, has led him to a change of opinion regarding the above method. In the first case, labor was induced on account of advanced albuminuria, after the usual therapeutic means had been tried. Following consultation with his colleague, Wilke, the author, under all aseptic precautions, injected 100 cms. of chemically pure glycerine between the fœtal membranes and the uterine wall. In a short time the patient showed symptoms of profound collapse, which, notwithstanding all means of restoration, ended fatally in a few hours, the patient dying undelivered. The autopsy showed death to have been due to nephritis.

In the second case, induction of labor had been attempted by bougies four weeks before term on account of rachitic pelvis combined with stenosis of the os uteri and cervix. The bougies not having the desired result, after consultation 100 cms. of concentrated glycerine were injected. One hour afterward the patient suddenly became cyanotic, and the temperature, which had been 39°, fell to 37° C., rising again to normal.

The urine drawn off by catheter an hour after injection showed blood, albumin, and casts, and spectroscopic examination demonstrated methemoglobin with hemoglobin. In twenty-four hours these abnormal constituents gradually disappeared. The glycerine failed to excite uterine contractions, but a small living child was delivered later by other means. The mother recovered.

The author believes the glycerine, in the above cases, caused decomposition of the blood, and he agrees with Afanassiew, who found that, in dogs, glycerine produced hemoglobinuria, glomerulo-nephritis, and even interstitial nephritis. Although, in the first case, nephritis undoubtedly existed, it is his opinion that the glycerine injection hastened the fatal termination.

Subcutaneous Injections of Aristol in Tuberculosis.

About three years ago Dr. Nadaud reported to the Paris Society of Therapeutics a method of treating tuberculosis by aristol, which attracted so much attention that the society appointed a committee to make a thorough investigation of its merits. The report of the committee was also confirmatory of the favorable claims made for this treatment by its originator. Nadaud employed subcutaneous injections of 1 per cent. solution of aristol in sterilized oil of sweet almonds, in doses of 1 C. C., daily, and was successful in effecting a cure in seven of twenty-three cases of pulmonary tuberculosis, the duration of the treatment varying from twenty-five to thirty days. In five cases rapid improvement occurred, although interrupted by a relapse necessitating a second series of injections. Three of the patients who had large pulmonary cavities were not benefited. By the use of aristol the cough was controlled and expectoration diminished; the night sweats disappeared, and there was a gain in weight and strength. The remedy seemed to be useful only in first and second stages of the disease, while in extensive destruction of lung tissue its effects were negative or but slight. The injections produced little or no pain, and no irritation or inflammation of the skin at the site of puncture. Dr. R. Da Silva, of Brazil, employed this method in the case of a boy 6 years old, who suffered from pulmonary tuberculosis, and observed pronounced improvement after four weeks' treatment. Recently Dr. Berardinone has repeated the experiments of Nadaud in twelve cases of phthisis and obtained equally

good results. He made use, however, of larger doses, from 0.03 to 1-5 gm. of aristol daily, distributed in several injections, but never observed toxic effects or signs of irritation. This treatment proved beneficial in cases not too far advanced, relieving the symptoms and bringing about an increase in weight and strength, and the results have been so encouraging as to lead the author to highly recommend it to the profession.

Arseniate of Soda Hypodermically in Luecemia, etc.

The Cincinnati Lancet-Clinic.

Prof. G. Rummo (*La Semaine Medicale*, No. 29, 1894), on account of the fact that Fowler's solution is an irritant to the subcutaneous tissues when employed hypodermically, and as no one would deny the efficacy of arsenic in leucemia and lymphadenia, employed a 1 per cent. solution of the arseniate of soda as a substitute. Injected with aseptic precautions the procedure is painless, while it leaves no nodules at the place of puncture. He has tried it with success in several cases of both diseases. To obtain good results one should not fear to employ large-sized doses. In his cases he began by injecting 5 drops of the 1 per cent. solution, and rapidly carried the dose up to 50 or 60 drops per injection. He continued these elevated doses until signs of intolerance appeared—dryness of the throat, sensation of constriction of the pharynx, injection of the ocular conjunctiva, slight edema of the eyelids, rhinitis, cutaneous eruptions, formication, headache and a tendency to diarrhœa. Then he would discontinue, to resume treatment after their disappearance. In this manner he has been able to give as many as fifty injections to the same patient. Under their influence the spleen and enlarged glands diminished considerably in volume, the relation of the red and white blood corpulses neared the normal, and the general condition greatly improved.

Action of Calcium on the Heart.

From Congress of American Physicians and Surgeons—The Medical Record.

Dr. W. H. Howard then made an interesting demonstration of the effect of calcium salts on the contractility of the heart. He had the heart of a turtle in a bulb, connected with a very delicate water manometer; and having connection by a stop-cock with three flasks containing: 1, normal sheep's blood; 2, sheep's blood with the calcium salts precipitated by excess of sodium oxalate; and 3, sheep's blood with excess of calcium chloride. In the first instance the heart was fed with the normal blood, showing normal contractions; then it was fed with the decalcified blood, upon which the contractions became less frequent, the diastole being lengthened, and also irregular and jerky in action, finally coming almost to a complete standstill, practically a potash paralysis. Then the blood with excess of calcium chloride was turned into the heart, which very soon began to beat more frequently and regularly and was finally restored to a practically normal condition.

Dr. Howell said it had been so far impossible to decide absolutely whether it was the absence of the calcium salts or the presence of the excess of oxalates which caused the paralysis, it being at present practically impossible to precipitate all of the calcium salts without an excess of oxalates. We cannot exactly neutralize the calcium salts, as we do not know in any particular sample of blood just how much is present in soluble and ergo precipitable form, and how much is in composition more or less stable with proteid and other bodies.

To OBVIATE the line of hypertrophied tissue in Thiersch's method of skin-grafting, Abbe cuts the grafts so that one edge is perfectly straight and smooth and the other serrated. In applying them the serrated edge of one graft is made to cover the smooth edge of the other graft.

DR. BUCKMASTER asked if the patient who had pressure paralysis had been in the Trendelenburg position. He had a patient who had suffered from this trouble and he thought that the paralysis might be explained; for, with the hands above the head, pressure on the nerves of the upper extremity is apt to occur. He was surprised that it should be necessary to sound a note of warning regarding the use of sublimate solution after labor; he thought this practice had been generally abandoned long ago. In view of the fact that we have in our possession such safe antiseptics as lysol and creolin, it is highly improper, in his opinion, to use sublimate solution, except possibly in a very dilute form—1-1000 or 1-4000.—*N. Y. Jour. Gynec. and Obstetrics, June, 1893.*

Liquor Sedans.

Editor Medical Age:

This I find to be a utero-ovarian sedative and anodyne of exceptional value, as in my hands it has produced the most brilliant and flattering results, far exceeding my most sanguine expectations.

Mrs. W., æt. 44 years, and approaching the menopause; very anæmic, thin, and of a nervous temperament, much anorexia at times; habitually constipated; complains often of headache and palpitation, with frequent but scanty micturition; menstruation very irregular, returning every three to five weeks, and lasting from two to four days; flow small in amount and nearly colorless; attended with violent pains in the lumbar region, groins, with general tenderness over the hypogastric region; no organic lesion of the heart, simply functional as a result of other lesions.

Upon examination, I detected retroversion of the uterus of the second degree, and a profuse leucorrhœa. Had previously almost exhausted the materia medica in seeking a remedy for her relief; had given Hayden's viburnum comp., aletris cordial, fluid extract viburnum prunifolium, cannabis Indicæ, etc. As a *dernier ressort*, I ordered Liquor Sedans, one drachm four times a day, to be continued during menstrual period; Fowler's solution with bromides; and an injection for the leucorrhœa; also placed a Thomas' retroversion pessary. Saw her four days later; met me with a smile and remarked the "new medicine" was going to "cure" her. Her improvement has been steady and rapid; appetite good; menstrual epoch unattended with pain; discharge higher colored and more profuse, lasting from five to six days, and more regular than before for years. Luecorrhœal discharge disappeared; does not suffer with palpitation or headaches. Such is my happy success with that grand therapeutic agent, Liquor Sedans.

CHAS. KELLEY GARDNER, M. D.

Gastric Affections.

Dr. Fraser, in his recent address before the International Medical Congress, advocated the use of bichromate of potassium in dyspepsia. He had cured eighteen obstinate cases. One-half to one-sixth grain was given in pill form three times a day. The pain and vomiting soon disappeared and complete cures resulted. He claims that its therapy is due to its local effect as antiseptic and analgesic.

I HAVE given Peacock's Bromides a thorough trial, and have since then invariably prescribed it in preference to other preparations of its kind. During my trip across the ocean I gave it to several passengers who suffered a great deal from sea-sickness, with very beneficial results.

DR. B. D. EASTMAM, ex-superintendent of the Topeka Insane Asylum, has been elected to the chair of Materia Medica and Therapeutics in the Kansas Medical College.

Garbolic Acid Hypodermatically for Erysipelas.

Philadelphia Polyclinic.

Gaston (*Medical and Surgical Reporter*) has for twenty years employed this drug in the various forms of erysipelas with invariably good effect in promptly arresting the progress of the disease. He employs the following formula:

Carbolic acid	f ʒ i
Glycerin	f ʒ iii
Distilled water	f ʒ iv

Mix and inject hypodermatically one syringeful in each portion of the size of a hand, daily.

With this, local irritation has resulted from the injections in only a few cases. Where the thickened and hardened condition of the skin has rendered it difficult to introduce the needle, he has selected points on the border of the inflammation to make the injection, so as to reach the areolar tissue beneath.

On one occasion a toxic influence was manifested, but he has repeatedly used a syringeful of the solution in four different places without producing any untoward effect. It is proper to repeat the injections daily for three days, but he has never had occasion to continue the treatment longer. In some cases he had depended upon it alone, but in others has employed purgatives and tincture of chloride of iron.

The Prevention of Cracked Nipples.

Therapeutic Gazette.

The *Lancet's* Paris correspondent says: "The direct relation of mammary abscess occurring during the period of suckling and excoriations of the nipple is now fully admitted. Many mothers object to suckling their infants on account of the dread of this complication. Artificial feeding with its frequent failures is then resorted to, and the child suffers. Antiseptic washing of the nipples has greatly diminished the frequency of abscess of the breast, but cracked nipples continue to be of common occurrence. For the last ten years Professor Pinard has been advising nurses as a matter of routine to keep the nipples covered with a compress saturated with a solution of boric acid. This precaution has had the effect of markedly diminishing the frequency of lymphangitis, but instances of an increase of temperature in young mothers due to microbian infection of the nipples, are still numerous. M. Lepage strongly recommends that the nipples should be regularly washed with the following solution. Red iodide of mercury, 10 to 20 centigrams (2 to 4 grains); spirit of wine, 50 grams (1½ ounces); glycerine, 500 grams (1 pint); distilled water, 450 grams (1 pint). If, after using this for a few days the ulceration disappears, substitute a solution of boric acid. Any crack that may develop is covered with tarlatan moistened with the mercuric solution. The following figures appear to confirm M. Lepage's good opinion of the comparative value of his method. In 331 cases of lying-in women whose breasts were treated by the Pinard method there was an increase of temperature in 67, the corresponding figures in M. Lepage's cases being 23 out of 440. Moreover, the healing of the cracks is said to be expedited and the pain greatly diminished by the mercurial treatment.

BUT few physicians know how to use the lancet, venesection being one of the lost arts.

"I HEAR that Jones treated his family doctor very badly."

"So I heard. I suppose he thinks that turn about is fair play."—*Funny Bone.*

DR. SQUILLS—"Did you hear of the murder last night?"

Dr. Pills—"No, doctor, whom did you kill?"—*Ph. Era.*